

### ABSTRACT

A system of data transfer between a first processing device and a second processing device which speeds data transfer by eliminating intermediate storage steps. A plurality of memory storage devices are provided between the first and second processing devices for the purpose of synchronization and alignment. One of the memory storage devices is associated with the second processing device. In accordance with a first embodiment of the present invention, a new instruction is provided to implement a data transfer function for transferring data directly between a first memory storage device and a second memory storage device, without intermediate storage in a processor register. Thereafter, the data is transferred from the second memory storage device to the memory storage device associated with the second processing device. In accordance with a second embodiment of the present invention, data is efficiently transferred directly between a first memory storage device and the memory storage device associated with the second processing device, without intermediate storage in either a processor register or a second memory storage device.